



# Environmental Services Facts

## Contaminants of Emerging Concern (CECs) in Wastewater

Modern wastewater treatment does an excellent job of treating and removing conventional pollutants and returning clean water to the environment. Wastewater treatment is a critical service that protects public health, maintains water quality, and allows communities to grow. However, new pollutants enter our wastewater all the time. Water professionals are especially interested in a category of chemicals called contaminants of emerging concern (CECs) or emerging contaminants. This category includes chemicals from many sources that have been detected in surface waters (lakes, rivers, and streams) and groundwater.

To understand how these chemicals enter our wastewater system and our environment, we need to look at our modern lifestyle. We use medicines, personal care products, household cleaners, fertilizers, and other chemicals every day. Even when we use them as intended, they can go down our drains or into the environment. Wastewater treatment facilities aren't designed to take these contaminants out of the water, and removing them can be much more expensive than preventing them from entering our water in the first place.

CECs are typically detected at very low levels, but the effects of these contaminants on aquatic life and human health are not yet fully understood.

## Pharmaceuticals and Personal Care Products (PPCPs)

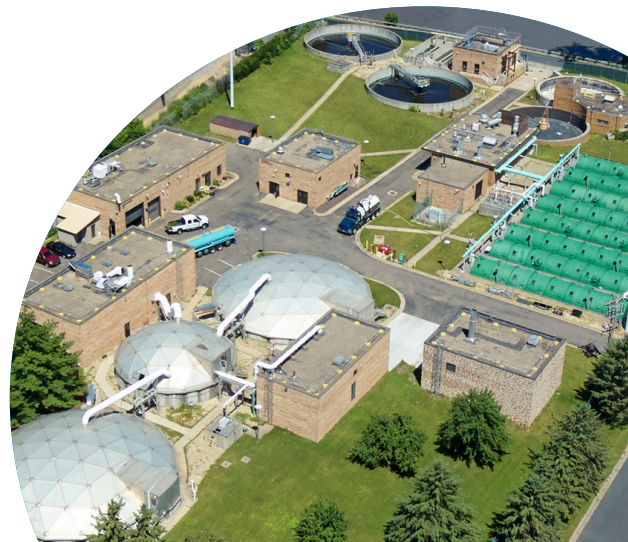


When we take medications (pharmaceuticals) or use personal care products like shampoos, deodorants, and cosmetics, some of those products get flushed or washed down our drains and enter the wastewater collection and treatment system. Only about half of all prescription drugs are removed by wastewater treatment.

Many of the chemicals from pharmaceuticals have been considered low risk because they are detected in the environment at a low concentration. Usually, scientists are detecting CECs at levels in the parts per billion or parts per trillion. But ecological disruption can occur at levels far below what is traditionally considered toxic, especially because pharmaceuticals are intentionally designed to enact some biological change (this is how they help the people who take them). Some observed examples of ecological disruption include hormone changes in fish and behavioral changes such as reduced predator-avoidance capabilities, reduced feeding, and lower reproduction rates.

Examples of some of these chemicals from PCPPs found in water include:

- DEET (a key ingredient in insect repellent),
- antibiotics used to treat infections in humans and animals or used in antibacterial soaps,
- antidepressants,
- antifungals,
- hormones, and
- diabetes, cholesterol, blood pressure medications.





## Microplastics



Tiny pieces of plastic referred to as “microplastics” (less than 5 mm in size), are being found throughout the environment. Microplastics often result from the breakdown of other pollutant plastic material in the environment. Some microplastics enter the wastewater treatment system from residential or commercial laundry and industrial processes. Plastic fibers are the most common and troublesome form of microplastic. Thousands of these microfibrils can be shed each time that clothing items made from synthetic materials are washed.

Fish and other wildlife often mistake microplastics for food, and these microplastics are being found in our drinking water, including bottled water. Modern [wastewater treatment removes most microplastics](#), but some still enter our area rivers. There are lots of unknowns about microplastics, including whether their chemical composition could be harmful to aquatic life and humans when consumed.

## Household Hazardous Waste



Household hazardous wastes should never be flushed or poured down your home drain or a storm drain. These include unwanted paints, solvents, automotive chemicals, used motor oil, weed killers, and insect or rodent bait and killers. Proper disposal of these items helps to keep our area rivers clean and safe.

## What the Metropolitan Council does related to CECs

As required by National Discharge Pollutant Elimination System permits, MCEC tests all of our treated water for toxic chemicals at our wastewater treatment plants that discharge to area rivers.

These tests were developed by the U.S. Environmental Protection Agency (EPA). They are designed to measure the total toxic effect of treated wastewater on aquatic life. They include measuring survival, growth, and reproduction over periods ranging from 48 hours to 7 days. These unique tests help measure toxicity in complex mixtures such as treated municipal wastewater.

Metropolitan Council Environmental Services continues to provide the Minneapolis-Saint Paul metropolitan area with excellent wastewater collection and treatment, consistently earning Peak Performance Awards from the National Association of Clean Water Agencies for perfect compliance.

## What Can You Do to Keep Our Rivers Healthy?

- Visit the [Minnesota Pollution Control Agency website](#) for more information on how to properly dispose of unwanted over the counter and prescription medications.
- Check with your county to learn where you can properly dispose of unwanted household hazardous waste. [Minnesota household hazardous waste program](#).
- Avoid single-use plastics, such as water bottles, utensils, and shopping bags.
- Make sure whatever plastics you do use either gets recycled or put in the trash.
- Visit the [Minnesota Pollution Control Agency website to learn more about CECs](#).

